California Department of Health Services
Environmental Health Investigations Branch

QUESTIONS AND ANSWERS ABOUT CHILDHOOD CANCER IN ROSAMOND

November 2002

The California Department of Health Services (CDHS) has developed this fact sheet to answer questions about childhood cancer in the Rosamond area. This fact sheet is based on information CDHS collected in the 1980s and 1990s.

What is Childhood Cancer?

Generally speaking, cancer is an abnormal growth of cells in a specific part of the body. Although most people think of cancer as one disease, there are actually many different types of cancer. Some types are more common than others. Cancer in children is rare. For every 10,000 children, one to two children will develop cancer every year. Leukemia, a cancer of the blood, is the most common type of cancer in children. While the causes of childhood cancer are generally unknown, scientists think that genetics and environmental factors may be influences.

What is a Cancer Cluster?

A cancer cluster occurs when the number of people with cancer in an area is more than would be expected during a period of time. There are many different types of cancer, and it is normal to find that a community has more of one type of cancer than expected and less of others. For this reason, the number of cancer cases has to be many more than expected before it is considered a "cancer cluster." How much more depends on how common the cancer and how large the community.

When are Cancer Clusters Investigated?

When a cancer cluster is found, health officials may investigate. Generally speaking, cancer clusters in adults are very difficult to investigate, because it takes a long time for cancer to develop. The cancer may be caused by many factors, including exposure to chemicals that occurred many years ago or while they were living somewhere else. For these reasons, cancer clusters in adults are rarely investigated. In the case of children with cancer, there is a shorter period of time between a child's exposure to a toxic chemical and the appearance of cancer. Health officials may investigate cancer clusters in children.

An investigation usually begins with the local California Cancer Registry office. Investigations may include interviewing the families of the children with cancer to identify factors in common. Health officials may also investigate potential community environmental hazards. This investigation will include identification of the location and type of chemicals in the community and whether there is a way for the chemical to come into contact with children or adults.

Was There a Childhood Cancer Cluster in Rosamond?

Yes. The Kern County Health Department and CDHS identified a cluster of childhood cancer in Rosamond. During the years 1975-1984, eight cases of childhood cancer (ages 0-15) occurred in Rosamond. During those years, the rate at which children in Rosamond developed cancer was several times greater than in areas like Los Angeles and San Francisco. Four of those cases were medulloblastoma, a rare type of brain cancer; two were rhabdomyosarcomas, one Hodgkins lymphoma, and a Wilm's tumor. None of the cancers were leukemia, the most common form of childhood cancer. CDHS did not find elevated rates of childhood cancer in the areas immediately surrounding Rosamond.

Did CDHS Investigate the 1975-1984 Rosamond Childhood Cancer Cluster?

Yes. In 1987, CDHS studied the possible causes of childhood cancer in Rosamond. Health officials were concerned by both the number of children in the cluster and by the number of children with medulloblastoma. As a part of the investigation, CDHS:

- Interviewed the families about such things as their diet, occupation, and pesticide use. Living in Rosamond was the only thing in common among the children.
- Worked with other agencies to identify possible environmental hazards in the area. The Department of Toxic Substances Control (DTSC) identified several sites and facilities where hazardous waste was stored. The soil or waste at these sites did contain chemicals that cause cancer.
- Studied the soil and water from the homes of the children. The soil and water from the homes did not contain unusual levels of contaminants. In the late 1980s, it was not possible to measure the air quality from the time when the children developed cancer. Air samples, collected at four locations throughout Rosamond in 1988, however, did not contain high levels of metals.
- Estimated air emissions from the 1970s and 1980s from industrial facilities that were no longer in operation. These estimates looked at "worst-case" emissions from these sites. CDHS then compared these estimates to other areas. The air concentrations of contaminants in Rosamond were similar to levels found in Los Angeles.

Did CDHS Find the Cause of the Cancer Cluster?

No. CDHS did not find an environmental cause for the childhood cancer rates in Rosamond. While CDHS identified several locations in Rosamond that were contaminated with dioxins, furans, and other chemicals that cause cancer, we did not find likely ways for children to have been in contact with these chemicals. The cancer cluster may not have been caused by environmental factors, or it may have been caused by environmental factors that could not be determined. For example, some chemicals do not remain in the environment or in the human body for long periods of time, and cannot be measured after exposure.

What About Childhood Cancer in Rosamond Now?

CDHS looked at cancer information for Rosamond for 1985 to 2000. During this time, there were seven new cases of childhood cancer in Rosamond. Based on the number of children in Rosamond, we would have expected five new cases of children with cancer during this time.

Childhood Cancer Among Rosamond Children			
Year	Number of Children in Rosamond	Expected Number of Cancer Cases	Actual Number of Cancer Cases
1975-1984	683 (1980 Census)	1	8
1985-1994	1,490 (1990 Census)	2	2
1995-2000	2,880 (2000 Census)	3	5

Rosamond was defined as Census Tract 58.

The rate of childhood cancer in Rosamond has gone down since the original cancer cluster. While the childhood cancer rate in the late 1990s is more than was expected, it is not high enough to be identified as a cancer cluster. Of the seven new cases, one was medulloblastoma, the rare form of cancer that occurred in the original cluster. Based on the investigation conducted in 1987, CDHS does not believe that the increased rate of cancer is being caused by high levels of environmental contamination.

What About Cancer in Adults?

While cancer in children is very rare, cancer in adults is more common. One out of every three adults will develop some form of cancer in their lifetime. In adults, cancer is generally caused by many factors related to diet, heredity, and chemicals in the environment.

The Cancer Registry looked at the rate of cancer for adults in the Rosamond area between 1988 and 1998. They found 456 new cancer cases during that time. For a community the same size as Rosamond, they would have expected 463 cases during that same time. The overall rate of adult cancer in Rosamond, then, is what we would have expected.

When investigating the childhood cancer cluster, CDHS was concerned about the possibility that adults may have been exposed to chemicals that might have drifted into the air and soil in the community. We collected and analyzed over 100 soil samples for dioxins and furans. Dioxins and furans were not found in the soil at levels that would cause concern for adults or children. Elevated levels, however, were found in eggs from chickens raised on the ground. CDHS issued a recommendation that residents limit their consumption of these eggs.

What is Being Done Now?

The Department of Toxic Substances Control of the California Environmental Protection Agency is the regulatory agency responsible for the investigation and clean up of hazardous sites in the Rosamond area. Currently, DTSC is monitoring several ongoing clean-up projects in Rosamond. Information about these sites is available from DTSC at the address listed at the end of this fact sheet. In addition, the Agency for Toxic Substances and Disease Registry (ATSDR) is evaluating hazardous sites located on the Edwards Air Force Base. Information on these sites and ATSDR activities can be obtained by contacting ATSDR at (404) 498-0057, or toll free at 1-888-422-8737.

With the assistance of the California Cancer Registry, CDHS will be monitoring the rate of childhood cancer in Rosamond in order to determine if further investigation is necessary. CDHS is also studying childhood cancer statewide in California. Environmental exposures to pesticides and air toxins are being examined to determine their relationship to cancer. By studying a large number of cases statewide, we hope to identify contamination in the environment that may harm children's health.

Where Can I Get More Information?

For information regarding current and past cancer rates, contact:
California Cancer Registry
ATTN: Paul Mills
1320 E. Shaw Ave. #160
Fresno, CA 93710
(559) 222-9272

For information regarding current clean-up activities in the Rosamond area, contact:
CA Department of Toxic Substances Control
ATTN: Nathan Schumaker
8800 Cal Center Drive
Sacramento, CA 95826 (916) 255-3650

For information regarding the childhood cancer study conducted in 1987, contact:
California Department of Health Services
Environmental Health Investigations Branch
ATTN: Martha Harnly
1515 Clay Street, Suite 1700
Oakland, CA 94612
(510) 622-4500

For general health information, contact:
Kern County Department of Public Health
1800 Mt. Vernon Avenue
Bakersfield, CA 93306
(661) 868-0301